

CLAIMS

What is claimed is:

1. A computer method for converting an utterance representation into a response, the computer method comprising the steps of:
 - 5 generating a goal derived from the utterance representation;
 - analyzing the utterance representation based on the goal and a set of goal-directed rules to identify ambiguous information in the utterance representation; and
 - generating a response based on the analysis of the utterance representation.
- 10 2. The computer method of Claim 1 wherein the step of analyzing the utterance representation comprises applying a goal-directed reasoning analysis based on the set of goal-directed rules to clarify the ambiguous information.
3. The computer method of Claim 2, wherein the step of analyzing the utterance representation comprises accessing data in a conversational record of related utterances to clarify the ambiguous information.
- 15 4. The computer method of Claim 2, wherein the step of generating the response comprises generating a question directed to a provider of the utterance representation to clarify the ambiguous information, the question emerging from the analyzing of the utterance representation and requesting further information from the provider.
- 20 5. The computer method of Claim 1, wherein the step of generating the response

comprises generating the computer application program command based on the utterance representation and based on the analysis of the ambiguous information.

- 5 6. The computer method of Claim 1, wherein the utterance representation is based on a set of propositions, each proposition comprising an attribute, an object, and a value.
- 10 7. The computer method of Claim 1, wherein each goal-directed rule comprises a set of conditions and a set of actions, each condition consisting of a first proposition or a first script command and each action consisting of a second proposition or a second script command.
8. The computer method of Claim 1, wherein the response is a computer application program command based on the utterance representation.
9. An apparatus for converting an utterance representation into a response, comprising:
- 15 a database storing a set of goal-directed rules;
- a digital processor coupled to the database, the digital processor hosting and executing a reasoning facility that is configured to:
- 20 generate a goal derived from the utterance representation;
- analyze the utterance representation based on the goal and the set of goal-directed rules in the database to identify ambiguous information in the utterance representation; and
- generate a response based on the analysis of the utterance representation.

10. The apparatus of Claim 9 wherein the reasoning facility applies a goal-directed reasoning analysis based on the set of goal-directed rules to clarify the ambiguous information.
- 5 11. The apparatus of Claim 10, wherein the reasoning facility accesses data in a conversational record of related utterances to clarify the ambiguous information.
- 10 12. The apparatus of Claim 10, wherein the reasoning facility generates a question directed to a provider of the utterance representation to clarify the ambiguous information, the question emerging from the analysis of the utterance representation and requesting further information from the provider.
13. The apparatus of Claim 9, wherein the reasoning facility generates the computer application program command based on the utterance representation and based on the analysis of the ambiguous information.
- 15 14. The apparatus of Claim 9, wherein the utterance representation is based on a set of propositions, each proposition comprising an attribute, an object, and a value.
- 20 15. The apparatus of Claim 9, wherein each goal-directed rule comprises a set of conditions and a set of actions, each condition consisting of a first proposition or a first script command and each action consisting of a second proposition or a second script command.
16. The apparatus of Claim 9, wherein the response is a computer application program command based on the utterance representation.

17. A computer program product comprising:

a computer usable medium for converting an utterance representation into a response; and

a set of computer program instructions embodied on the computer useable medium, including instructions to:

generate a goal derived from the utterance representation;

analyze the utterance representation based on the goal and a set of goal-directed rules to identify ambiguous information in the utterance representation; and

generate a response based on the analysis of the utterance representation.

18. The computer program product of Claim 17 wherein the set of computer instructions comprises further instructions to apply a goal-directed reasoning analysis based on the set of goal-directed rules to clarify the ambiguous information.

19. The computer program product of Claim 18, wherein the set of computer instructions comprises further instructions to access data in a conversational record of related utterances to clarify the ambiguous information.

20. The computer program product of Claim 18, wherein the set of computer instructions comprises further instructions to generate a question directed to a provider of the utterance representation to clarify the ambiguous information, the question emerging from the analysis of the utterance representation and requesting further information from the provider.

21. The computer program product of Claim 17, wherein the set of computer

instructions comprises further instructions to generate the computer application program command based on the utterance representation and based on the analysis of the ambiguous information.

5 22. The computer program product of Claim 17, wherein the utterance representation is based on a set of propositions, each proposition comprising an attribute, an object, and a value.

10 23. The computer program product of Claim 17, wherein each goal-directed rule comprises a set of conditions and a set of actions, each condition consisting of a first proposition or a first script command and each action consisting of a second proposition or a second script command.

24. The computer program product of Claim 17, wherein the response is a computer application program command based on the utterance representation.

15 25. An apparatus for converting an utterance representation into a response, comprising:

means for generating a goal derived from the utterance representation;

means for analyzing the utterance representation based on the goal and a set of goal-directed rules to identify ambiguous information in the utterance representation; and

20 means for generating a response based on the analysis of the utterance representation.

26. A computer program propagated signal product comprising:

a computer usable propagated medium for converting an utterance

1004750-01002

representation into a response; and

a set of computer program instructions embodied on the computer usable propagated medium, including instructions to:

generate a goal derived from the utterance representation;

5

analyze the utterance representation based on the goal and a set of goal-directed rules to identify ambiguous information in the utterance representation; and

generate a response based on the analysis of the utterance representation.

1280.2004-000